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## **ABSTRACT**

### **THE JOURNEY TOWARDS INDUSTRIAL MONITORING AND CONTROL APPLICATION OF WIRELESSHART TECHNOLOGY**

Process monitoring and control applications in the industries are in the past achieved exclusively via wired systems. The wired systems are costly, complicated and difficult to install and maintain. Other disadvantages of wired systems in the industry includes limited flexibility and scalability. Furthermore, in the event of failure, troubleshooting could be painstaking and time consuming. Thus, wireless technology is a good candidate to solve the problems and challenges of the wired system in industrial monitoring and control application. However, technology suffers slow deployment then due to lack of open and interoperable industry standard. The then available standards such as Bluetooth, ZigBee, Wi-Fi e.t.c could not handle the industry requirements of security, device interoperability, flexibility and scalability. Hence, this led to the emergence of industry standards such as WirelessHART, ISA 100 wireless and Wireless network for Industrial Automation-Process Automation (WIA-PA).

Among the three industrial wireless standards, the WirelessHART has an edge over both ISA100 wireless and WIA-PA. This is because, the standard is based on already popular HART protocol that has close to forty million devices installed globally. Even with the advantages the WirelessHART has over its counterparts, its application is still limited to monitoring while attempts are being made for control. This paper gives the account of our journey towards applying WirelessHART technology for industrial process control.